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The Shattuck Lecture,
1895.

THE
NEW-ENGLAND INVALID.

By ROBERT T. EDES, M.D.

Read before the Massachusetts Medical Society, June 11, 1895.

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THE NEW-ENGLAND INVALID.

THE provisions under which the Shattuck lectureship was established specify "Historical and other essays on the climate of Massachusetts or the diseases of its inhabitants, or such other subjects as said Society or its government may select."

These alternatives are surely liberal enough, and the committee have given me not the least hint to limit my choice, but it certainly seems in accordance with the wishes of the founder that some matter of decided local interest should be discussed in the discourse provided for by his liberality.

Common report and more or less jocose remarks attach the name of New England to one at least of the supposable causes of nervous affections. How justly is another matter, but it hardly requires this facetious etiology to make it appropriate for me to choose as my subject one which must have for every one of you, not strangely and exceptionally favored by fortune, a deep professional and often personal interest.

An eminent physician, not herself a native of New England, who looks upon a relative impairment of the reproductive functions as largely a phenomenon, though a highly complicated one, of acclimation and as closely connected with the neurotic constitution, says that "*it should* be more conspicuous in New England, whose rigorous climate differs more from that of old England than does the climate of the Middle States."*

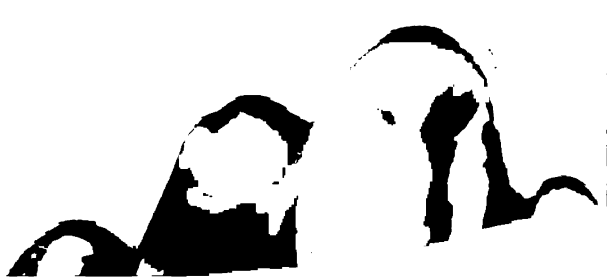
* Dr. Mary Putnam Jacobi: MS.

Statistics, I think it is not rash to assume, are unobtainable as to the relative frequency of nervous invalidism in different portions of this country.

Inquiries of colleagues, whose wide and varied experience extends over more degrees of latitude than my own, have furnished me only with impressions, that less invalidism prevails north and south of the densely populated strip of coast from Boston to Washington and the great cities west of it. This, however, has undoubtedly far greater reference to mode of life than to climate, except so far as the latter influences the amount of out-door life.

Americans are called a nervous people. In fact nervousness has been called the American disease

Can we easily believe otherwise when we consider how rapidly the proportion of city dwellers is on the increase, and then the "fundamental morbid social conditions and tendencies which give rise to the nerve-shattering character of the life in great cities. To the city throng, especially those classes of the population which are discontented with their social position and seek to better it, the clerk and store-keeper who wishes to become a merchant and millionaire, the mechanic who would make of himself a manufacturer, the artist, writer, and specialist who thirsts for gold and distinction, the official who looks for a swift promotion; and, not less, the country laborer who hopes to find there better wages and more enjoyable life. All these meet, in their struggles to better their circumstances, a crowd of competitors who look and strive just as eagerly after the shining mammon, after the idol of fame and distinction beckoning in the distance; and are not always careful of their means of reaching it. Then all the strength must be exerted, and if the nervous tension is not sufficient for the demands upon it, it must be helped with stimulants; tea and coffee and strong cigars must be made to spur on the jaded nerves, and hypnotics force a troubled sleep."



You give me credit perhaps for a very good piece of description and a just appreciation of our dangerous conditions ; but undeservedly so. These last sentences do not describe Boston or Chicago, but are from a writer in the quiet city of Munich, supposed to be devoted to classical art and to beer. Here can be no restless political ambition, no worship of the almighty dollar, no complicated American drinks.

This author (Lowenfeld) explicitly rejects the claim of Beard for nervous prostration as an American peculiarity.

Is not the disposing cause the spirit of the times and not the spirit of the country ? Nervousness attacks the centres of civilization and of great interests, because there are concentrated those whose nervous disposition renders them more sensitive to the irritations of unrest, discontent and worry.

Whether we have more than our share is not easy to say ; it would certainly not be strange if it were so. But there is no doubt that we have enough to make the subject one of the highest importance.

There are directions in which a historical treatment of the subject might be made very interesting, but neither my time, my opportunities nor my sense of what is due to this Society have permitted me to offer a resumé of the literature instead of my own gleanings, however scanty, from a field unfortunately only too familiar to most of you.

The question as to the gradual increase of nervousness, of nervous invalidism, like that of insanity, is a very interesting one, but, again like that, a difficult one to answer with precision ; even more so in our case, since we have not even the approximately accurate information of hospital and census returns.

It must, of course, be admitted that these are not conclusive. And that any apparent increase of recorded insanity, instead of showing a progressive deterioration, is

more likely, on the contrary, to be an index of more careful diagnosis and more efficient treatment, we are glad to believe.

Even such an approximation as a comparison of these returns afford, we cannot have in a matter so much less distinct, and affecting the community legally and financially so much less than does insanity. When the question of the relative health of successive generations comes up, one is apt to hear that some one remembers his grandmother or his great-grandmother who had a very large family and hardly knew a sick day. This, however, is not so conclusive as it appears, for it is most probable that it is one out of two grandmothers or four great-grandmothers who had the large family who is best recollected, while the other three who had only one or two children have naturally left fewer descendants to sing their praises; or, what is much more to the purpose, one remembers his robust grandmother better than he does his invalid great-aunt.

Neurasthenia has not been long enough separated off as a distinct condition to have accumulated around itself a mass of ancient literature.

Hysteria, however, has done so, and its columns in the Index Catalogue of the Surgeon General's Library number 34, including 210 titles of books on the general subject alone, going back to the latter part of the seventeenth century and becoming quite numerous in the early part of the eighteenth.

If, however, we accept, as I think we are justified in doing, miracle cures in the case of young women invalids, as very strong presumptive evidence of some kind of purely functional nervous affection, we can hardly say when we begin to get such cases.

I hope I shall not be accused of irreverence if I say that some of the miracles of the New Testament seem to have been of this kind. Hysterical trance is not an excessively



rare phenomenon, the Jews are notoriously a neurotic race, and such cases have been mistaken for real death.

Cases and epidemics, evidently hysterical, are not rare in history, although of course it is those of a violent and, so to speak, picturesque character which are more likely to be recorded than the neurasthenic and bedridden types.

Even if it turns out that nervous invalidism is not a disease exclusively of the present century, or of Massachusetts, or of New England, it is certainly not necessary to tell you that the conditions at work to produce it are as abundantly present here and now as anywhere, and it would only be a reminder of a considerable portion of your own labor, anxiety and trouble if I were to insist upon the importance and living interest of the subject to every one of you.

The New-England invalid is with us all. The old doctor has carried her all his professional life, and yet she is ready to bestow the care of herself upon the young man just making his reputation, and proud to be trusted where so many have failed. No specialist can escape her, for she has a symptom for every organ. The physician cannot dispose of her to the surgeon, for, after her braces have given out, after her spine has been shortened by a vertebra or two, after her pelvis and her pocket book are alike empty, she comes back to him "needing ONLY to be built up."

The surgeon can never flatter himself that he has seen the last of her, for when her ovaries and uterus have been safely bottled up where they can do no more harm, her kidneys may desert their proper sphere, descending to carry on the nefarious practices of their predecessors at the old place, or his first operations are successful only in providing a new location for a pain, to be cured by another.

But your troubles are the least. You see her occasionally. You must go, to be sure, when you know there is nothing to be done and you have not the time to do it. You must listen to the thrice told tale of symptoms which you

are as morally sure have nothing to do with any tangible lesion as if you had the patient upon the dissecting table. You must prescribe drugs which you know are useless and which you hope are inert, because you must appear to do something, or, worse yet, you may be driven to use those which are worse than useless, and which you too well know are not inert, because the necessity is absolutely forced upon you, and you cannot bear the charge of wanton cruelty, hoping that at some future day their use can be easily abandoned.

You are doing the most discouraging of work. You feel that you are in a treadmill from which there is no escape until you can resign your burden to another whose ignorance will give him enthusiasm, or are dropped discredited for a newer sensation.

But the mothers and the sisters, the husbands ! for whom there is no holiday. The unwearying response to the constant call for relief from the pain which it is no satisfaction to them to call "functional irritation," from the distresses, the burnings, the flutterings, the quiverings, the throbbings, the tensions, the relaxations ; the reproaches for indifference, the accusations of selfishness and the more trying repentance therefor, the ostentatious resignation of the misunderstood, the sympathy which they crave, the constant outflow of nervous force for which there is no adequate resupply in a confident hope of recovery ; is it strange that we hear so often : "If you cannot take her there will soon be another?"

Is she not worth studying?

Among the earliest to call attention to the health of American women as a class, and not simply with a view to the treatment of individual cases, was Miss Catherine Beecher in her "Letters to the People on Health and Happiness," published now some forty years ago.

Without pretending to speak from a strictly medical point of view, but rather as an experienced teacher and

philanthropist, and evidently a cultivated woman of sound common sense, she took great pains to ascertain facts. The quotations I shall make are of value as testifying not merely to the conditions at the time of writing, but, by contrast, to that of her childhood some fifty years before. Miss Beecher was born in 1800, and for many years kept a large and celebrated school for girls.

She says: "But the American people have pursued a very different course. It is true that a large proportion of them have provided schools for educating the minds of their children; but instead of providing teachers to train the bodies of their offspring, most of them have not only entirely neglected it, but have done almost everything they could do to train their children to become feeble, sickly and ugly. And those who have not pursued so foolish a course, have taken very little pains to secure the proper education of the body for their offspring during the period of their school life.

"In consequence of this dreadful neglect and mismanagement, the children of this country are every year becoming less and less healthful and good looking. There is a great change in reference to this matter within my memory. When young I noticed in my travels the children in school-houses or on Sunday in the churches, almost all of them had rosy cheeks, and looked full of health and spirits. But now, when I notice the children in churches and schools, both in city and country, a great portion of them either have sallow or pale complexions, or look delicate or partially misformed.

"When I was young I did not know of any sickly children. But now, the children grow less and less healthy every year.

"Every year I hear more and more complaints of the poor health that is so common among grown people, especially among women. And physicians say that this is an

evil that is constantly increasing, so that they fear, ere long, there will be no healthy women in the country."

Later, after several pages of statistics, evidently gathered in a scientific spirit and with a clear appreciation of the possible errors in that deceptive source of knowledge, based on enquiries among hundreds of representative individuals, and finding among them and their acquaintances a very large proportion of invalids, with a very small number of really healthy women, she speaks of her personal knowledge as follows :

"I am not able to recall, in my immense circle of friends and acquaintances all over the Union, so many as ten married ladies born in this country and century, who are perfectly sound, healthy and vigorous. I have nine married sisters and sisters-in-law, all of them either delicate or invalids except two. I have fourteen married female cousins, and not one of them but is either delicate, often ailing or an invalid. In my wide circle of friends and acquaintances all over the land out of my own family circle, the same impression is made. In Boston I cannot remember but one married female friend who is perfectly healthy." And the other great cities according to her are no better.

Miss Beecher saw in all the melancholy picture which she drew merely the natural result of a neglect of well known hygienic laws, and published her book in order to call the attention of her country women to them. Let us hope with effect. It is certainly my belief that many of these laws are, if not better known, more generally heeded than they were then.

I have so far made but little distinction between the various forms of chronic ill-health among women, and this for the reason that the distinctions were practically but little known to the lady whom I have quoted. Miss Beecher, indeed, is inclined to lay especial stress upon uterine displacements, but those who are familiar with the

rapid and constant changes in gynecological theory will see in this nothing more than a deference to the prevailing fashion at the time she wrote. Her statistics are not detailed enough to have great weight in this particular. Her therapeutics are of more general application.

For three years and a half I have had opportunities for observing a considerable number of chronic female invalids from among whom serious pelvic disease, other chronic diseases, and distinct forms of insanity, have already been weeded out by competent diagnosticians; and also a proportion of the more acute and curable forms removed, so that my clientele includes very largely cases of selected chronic invalids without obvious organic disease. It is this circumstance, and not any desire to prejudge the question, which had made me use the feminine gender throughout.

How the number of female invalids in the community would divide up between ourselves and the gynecologists it is not easy to say, since the numbers we receive, as well as those which find help in the hospitals devoted to the diseases peculiar to their sex, are limited not by the demand, but by the number of beds these institutions respectively offer; and these are not enough.

Many also go from one to the other, and it is by no means beyond the limits of possibility that the mere fashion of the day or the personal views of the patient determine at which kind of institution she first seeks relief. Indeed, even in the concrete, when the case is actually before us, I find that my gynecological brethren as well as myself are sometimes at a loss to know upon which set of symptoms, pelvic or nervous, both being present, the chief importance is to be put, and to determine which is cause and which is consequence. That vicious circle of which these two sets of symptoms form a large part of the circumference is likely to be completed and complicated by a third set seated in the digestive apparatus.

In going over the records of one thousand persons, with a view to classification, I have made, excluding cases which are either not essentially nervous or of a kind not to interest us in the present connection, the following classes, melancholia, neurasthenia, hysteria and hypochondriasis. This list does not indeed take cognizance of all the doubtful and mixed cases, of which there are endless combinations; but a classification which should undertake to do this thoroughly would amount to but little beyond affixing a name to each individual case, or at any rate would break up our figures into such small groups as to have no value for statistical purposes.

I have arranged 97 as melancholia, 490 as neurasthenia, 197 as hysteria and 33 as hypochondriasis.

I have no doubt, however, that if the same material were submitted to a dozen different neurologists every one of them would make a different distribution from this and from all the others, often widely so.

Even if we admit that neurasthenia is a distinct and separate well-marked morbid entity, I think no one of experience will doubt that it is easy for hysteria to assume many of its features, as well as those of melancholia and hypochondriasis, and, on the other hand, the soil of neurasthenia is one upon which any or all the other symptom-groups may very easily flourish.

A little more elaborate, and perhaps quite as practicable, a classification might be as follows:

1. The Malingerer, pure and simple.
2. The Exaggerator.
3. The Constitutional Neurotic.
4. The Hysterically Excitable.
5. The Neuromimetic.
6. The Confirmed Neuromimetic.
7. The Tense Neurasthenic.
8. The Limp Neurasthenic.
9. The Melancholic.

The extreme cases of many of these classes take us very close, and in melancholia distinctly beyond, the line of actual insanity. To speak of these in a little more detail :

1. The malingerer, feigning disease out of the whole cloth, in which she has no belief, I do not think I have ever seen in the female sex. I am inclined to doubt her existence outside of hospitals or workhouses, or perhaps in the rare case of malicious girls seeking to gratify a grudge or gain notoriety, like those, for instance, who were the principal accusers and witnessess in the days of Salem witchcraft.

I think that most women, unless instigated by some very special motive, who might feign disease for any length of time, would be almost sure to end by believing in it themselves.

2. The exaggerator we all know well, honest but whimsical, silly and self-indulgent.

3. The hysterically excitable, with her acute exacerbations, is also sufficiently familiar. Much of the earlier literature under this title of hysteria relates to this form.

4. If one were willing to use the vernacular in a form which might be offensive to those to whom it applied, he would be likely to speak of that class here called "constitutional neurotics" as "cranks" or "crooked sticks," persons whose inherent peculiarities of nervous organization are such as prevent them from acting or living in harmony and comfort with a community of a more average and less peculiar character. They are mild embryo paranoiacs.

Some theorists might substitute for the word "constitutional" "congenital," but this seems to me objectionable as emphasizing too strongly the tendency which undoubtedly exists in many if not in most cases ; but which, I believe, can be, to a considerable extent, either aggravated or relieved by the environment of the early years, to the extent even that education may have almost as powerful an influ-

ence as heredity. Habits of thought are largely formed and modified in childhood.

5-6. The next two groups, or neuromimetics, for which, with some enlargement, Sir James Paget's expressive name is used, are, in the first, those grades of hysteria involving anæsthesiæ, paralyses of all sorts, severe neuralgias; which, in the second, become contractures more than spasmodic, with wasting and with a marked decrease in the hopefulness of prognosis as time goes on. Among these are the most remarkable cases of invalidism, and also of the marvellous cures thereof.

It must be acknowledged, though I hardly know whether with sorrow or with pride, that the hysteria rendered classical by Charcot, the concentrated, highly educated and fully developed hysteria of the Salpetriere, is not the prevailing type with us. The American neurologist must content himself with fewer and less picturesque cases.

Neurasthenia has been divided into two groups, according to its type rather than anatomically, as is more usual, the latter appearing to be a classification according to what we might expect rather than what we see.

7. The tense neurasthenic is apt to be small, slightly underweight, with a dark complexion (though with many exceptions), poor appetite, constipation, flatulence, a quick pulse and heart beat, and a sphygmogram that indicates no great amount of force in the heart, but considerable resistance comparatively in the arteries, like that supposed to belong to interstitial nephritis, although of much less vigor. She will talk to you about books or science, if inclined in that direction, and often very interestingly, as well as about herself; but when she does reach the more important subject she describes herself as "all keyed up," "thinks she shall fly," and so on. You can see that she is making constant movements for no purpose except to work off nervous tension, and many of her muscles are in a state of contraction when

doing no useful work. A limb is kept in position, not by relaxing all the muscles and letting it rest, but by contracting the antagonists on each side. Her rigging is set up too taut.

By reason of these feelings, and not always because of any pain, she is likely to sleep badly. She cannot work without headache and backache, but she tries to get sleep by overexertion, and usually with poor success. It is upon this class of cases that the usefulness of the Delsarte system as a *thérapeutic* agent chiefly rests. It aims to cut off a useless and wearing expenditure of force.

Some fourteen years ago I took a number of sphygmograms among the patients of the Adams Nervine Asylum (see *Boston Med. & Surg. Journal*, May 19, 1881), and found nearly all of them to have a character closely resembling that to which Mohammed was at that time exciting a great deal of attention by declaring the precursor of chronic Bright's disease. In fact they agreed very well with some which were actually of that character.* Several of these patients have recently been heard from, and, so far I am aware, not one of them has died of renal disease.

8. The limp neurasthenic is apt to be of a lighter complexion, and may or may not be well fed. Her bowels are sluggish, but less obstinately constipated, and her appetite and digestion are below par. She does not speak of her "nervous" feeling, but talks of being tired, and when she sits or lies is quiet and does not strain her muscles. She is apt to say that "all she wants is rest," and yet she may have been doing nothing but rest for years. She is less likely to care for matters outside of her own condition, and I should say her prospect of recovery were on the whole more distant than those of her predecessor on the list.

Either of these conditions may be more or less chronic, and accompanied by more or less of the headache, backache and incapacity for mental exertion.

* Compare tracings No. 1 and 14.

No. 1, typical interstitial nephritis; death. No. 14, cure by faith; now well.

9. The melancholia of our inmates includes chiefly the milder forms known to alienists under that name, although of course now and then a case is met with which has very evidently gone far beyond the line of insanity.

As I have reminded you, the literature of hysteria goes back many centuries, but chiefly with reference to the more acute and striking forms, while anything like a careful study of the neuromimetic, for our purpose much more important, forms, is a more modern growth, reaching its culmination only under the auspices of Charcot and his school. It is quite evident that the cause of hysteria, or, at least, of the spasmodic hysteric manifestations, is to be sought for in no modern or local conditions. It might perhaps be questioned whether the more modern habit or manners of repression, of keeping the feelings concealed, a habit which increases with civilization and fashion, with higher social position, and is especially strongly marked in our Anglo-Saxon race, has not a good deal to do with the diminished prevalence of the more outspoken and striking forms, and the substitution therefor of the quiet, insidious, obstinate paralysees which so closely counterfeit organic disease, and are in reality so much more serious than a good old-fashioned hysteric "fit" which comes on slight provocation and is soon over.

Would it not be better if our customs and "good form" permitted a patient to scream, as she so often says she wants to, instead of restraining her feelings for propriety's sake, and developing a neuralgia or paralysis or an attack of "nervous prostration."

It is held by Breuer and Freud that the essential part of the action of mental or moral shock in the production of hysteria lies in the absence of the appropriate motor reaction, as, for instance, when a lower official received from his superior an insult which he could not resent. The correctness of this view seemed to be demonstrated by the

result that when the history of the affair was completely elaborated by hypnotism and fully talked over, the hysterical symptoms disappeared. This is not far removed from ordinary observation that it is much better to "get mad" and be done with it than to cherish the grievance in silence. The effort of inhibition seems to call for as much nervous expenditure as that of action, and in such a case as that just cited is of that peculiarly unremitting and wearing character which is so silently destructive of nervous integrity. There should be a proper balance between inflow of irritations and the outflow of motor energy.

Neurasthenia on the other hand is, by name at least, a much more modern development. The name is hardly twenty years old, and although the condition itself must have been occasionally met with, perhaps for all ages, yet its prevalence is a growth of modern times and a part of the price which we pay for a more complicated civilization. It is certainly much less prevalent among those whose labor is chiefly manual and involves but little responsibility. The histories of one thousand persons show this quite clearly, in the great preponderance of teachers, students, nurses, milliners and dressmakers, over domestic servants or factory hands. In this respect it differs distinctly from hysteria.

I do not recollect hearing of a case among the negroes, nor does my scanty knowledge of the subject furnish instances among the uncivilized races, where again hysteria seems to be well known. It is somewhat difficult to draw the line with certainty, however, between the different occupations which may be claimed as nervously exhausting. I recollect a girl in the City Hospital who said that her doctor had told her that "her brain was all worn out," and when I enquired further as to the nature of this exhausting employment was informed that it was pasting stamps upon shoes.

The relations of uterine disease and neurasthenia are interesting and important. No one now supposes that there

is any necessary and specific relationship between such disease and hysteria, the most cogent argument being that men, although much less frequently, become typical subjects of the nervous affection. The logical connection between the two conditions in a particular case, both being present, is far from easy to establish, and when it becomes doubtful as to how far either of them may have become dependent upon imagination, habit, or a fixed idea, the task becomes still more difficult.

A considerable amount of irregularity of the uterine functions, or rather a great increase in the amount of pain and general disturbance with which they are accomplished, is a common result of what is clearly a nervous condition, as much so as the gastric, intestinal and cardiac symptoms. It is quite true of "nervousness," as has long been remarked of hysteria, that the more serious organic affections, like fibroid or cancer, have no special tendency to its production except, of course, so far as hemorrhage or long continued pain may do so.

"Many of the nervous and even mental disorders, often assigned to 'reflex ovarian irritation' are the direct expression of cerebral disease or cerebral malnutrition, which also causes the vaso-motor paresis in the vascular territory of the ovaries."*

On the other hand, there are among our patients, even with the careful selection to which they are subjected before their admission, some in whom the much accelerated recovery after local pelvic treatment of the uterine symptoms shows that they are neither imaginary nor merely an accidental coincidence.

There is a belief, however, acknowledged and acted upon, that in some cases the effect of operative treatment is due to its decided psychical effect, in regard to which I shall have occasion to speak farther on. One may consult on

* Dr. Mary Putnam Jacobi: MS.

this point with great advantage a paper by Dr. J. William White, on "The Supposed Curative Effect of Surgical Operations *per se*." *Annals of Surgery*, Aug. and Sept. 1891.

When, however, the "slight local treatment" to which one of our patients attributed her partial improvement consists, as we know from other sources that it did in her case, of a removal of both ovaries, the matter is worthy of serious consideration.

Twenty-seven persons whose names are upon our books have had both ovaries removed for the relief of nervous symptoms. These organs were in some cases healthy or nearly so, and in others indurated and adherent. Of these, three or four recovered or nearly so, one or two of them having been not very far from the natural menopause.

Three or four others have improved after years of invalidism, so that it may well be doubted how far their recovery was accelerated.

One died of pulmonary tuberculosis and other diseases not connected in any way with the operation. One died of cocaine, one shot herself six months after "a highly successful operation."

Another case, herself a physician, in no way connected with the Adams Asylum, underwent the operation, partly, but I could not make out just how largely, at her own desire. She had had convulsive attacks, probably hysterical, and progressed steadily to hopeless insanity.

She had been an advocate of the operation, and had urged it upon a patient whom I had referred to her but who recovered without it, and at a later period called upon her in her own sickness. I do not know whether the merits of the operation were discussed at that interview, but the subject might have given rise to a very interesting conversation.

Our experience would not support the usual statements as to the almost absolute harmlessness of the operation.

One of our patients, a strong and comparatively young woman who suffered extremely from dysmenorrhea and hysteria, was, at her own request and after a full explanation, submitted to the operation at a hospital where you would admit that as good surgery is done as can be done, and died in a week, with no trace of septic infection, but apparently solely of the nervous shock taking the form of stuporous melancholia.

The conclusions to be drawn from these cases are that the chances of improvement from the removal of healthy ovaries from a young woman affected with nervous symptoms are exceedingly small, and that the operation should be reserved for those desperate cases where nothing else offers a prospect of relief near or remote, and where death may fairly be considered preferable to a suffering life.

The chance of a favorable psychic effect may be fairly offset by the much greater probability of an unfavorable one, in the development of a new set of morbid ideas, the disappointment at failure, the feeling that she is not like other women, and the chance of death.

When ovaries are distinctly diseased or the tubes filled with pus, or hemorrhage from a fibroid is wasting the patient's strength, then the question is no longer neurological but surgical, and should be looked at solely from that standpoint.

It is worth noting at this place that 276 married women under sixty, in regard to whom this point was recorded, had 566 children. Sixty-two were childless, seventy-one had one child each, fifty-three two, and there were only eight who had had more than six.

Theories of autointoxication are not easy to deal with clinically in the absence of extensive laboratory facilities, of which the chief and most essential would be a chemist such as there are but few of.

When the blood in quantity is not to be obtained, the ease with which either an excess or deficiency of a given

substance in the urine can be interpreted to mean an excess in the blood or in the tissues, gives an elusive character to the research more entertaining than instructive. A good many examinations have been made in the cases now under discussion which have gone beyond the determination of the presence or absence of albumen, but have not been numerous or regular enough in most cases to enable the course of elimination to be watched for any length of time. There is not a great deal of interest to be found therein, except possibly the general conclusion that the vital metamorphoses, as indicated by urea, often uric acid, and the total amount of solids, are taking place but sluggishly.

The urine is apt to be small in quantity, and, although of high specific gravity, not sufficiently so to bring up the total amount of elimination to the normal standard; normal, that is, as regards a person on full diet. There is, however, no reason to look for any poisonous retention due to deficient action on the part of the kidneys.

The phosphates have been determined only in a few cases from the feeling that, however close the relation may appear on chemical grounds between their excretion and the combustion of nervous tissue, yet the amount of variation in the quantity derived from this source would be so entirely obscured in the much larger quantity derived from the tissues generally and from the food, as to be not worth considering, unless the latter, the food, can be brought to a constant value, a condition not easily carried out.

In view of recent theories of the relation of neurasthenia to so called lithæmia, and headache as a special symptom, a considerable number of quantitative determinations of uric acid have been made, which seem to me to lead to the unexpected conclusion, that although there may be, as Dr. Haig's observations seem to show, such a thing as a uric acid headache, the neurasthenic headache is not of that character.

For reasons easily understood no search was made for organic substances like paraxanthine, requiring the evaporation of several litres of urine for their detection.

It is a rather singular fact, considering the wide diffusion of the lithæmic doctrine, that "suppressed gout" is mentioned only once in our papers as among the probable causes of nervous prostration.

The number of cases among 65 in which the proportion of uric acid to urea was determined in which it exceeded that laid down by Haig as the average, namely $\frac{1}{33}$, is very small altogether, and in most of these for only a single observation each. There is nothing in common to them which would enable one to connect this condition with any degree of probability, to any special symptom. The largest, $\frac{1}{2}$, was in a case of neurasthenia, where the total urine for 24 hours was very small, c.c. 400, and the urea corresponded, while the uric acid was apparently a little increased with reference to the usual daily output. The only case where an increased proportion corresponded to severe nervous symptoms, was one of very persistent headache, so severe and so constant that the idea of organic disease was entertained but never found other sufficient support. The fractions found at various times were $\frac{1}{28}$, $\frac{1}{36}$, $\frac{1}{36}$, $\frac{1}{34}$, $\frac{1}{32}$.

It is important to note that in this case, where there was no pronounced gastric disturbance, the weight constantly diminished.

In another case, in many respects similar, but where the weight increased without a corresponding improvement in the headache, the proportion of uric acid to urea was mostly between $\frac{1}{36}$ and $\frac{1}{66}$.

Other cases of increased proportion were of gall stone; hysterical paraplegia and contracture, with great emaciation and gastric disturbance; chronic gastritis, improving and gaining weight; agoraphobia; debility; melancholia;

severe dysmenorrhea and hysteria; convalescence (rapid) from hysterical vomiting; and idiopathic anemia.

In the cases where a number of observations were made upon the same patient it is just as difficult to trace any constant connection between excretion and fluctuation in symptoms. Since however an increased amount of uric acid in the urine may mean either that there is a large amount in store, or that it is being rapidly washed out, and on the other hand a diminished quantity may mean either that little is being formed or else that it is being held back in the tissues or again in the blood, it is very difficult to use these figures against any theory which might be brought forward.

As to the total daily output of uric acid it is equally difficult to connect increase or decrease with definite symptoms. In not a single instance did it reach one gramme per diem. The nearest to it (.870 mgr.) was from the case of gall stone.

The case of severe headache with a large proportion, also had rather a large total amount in 24 hours.

An autointoxication theory might easily be built upon the extremely frequent and important connection between constipation and conditions of great depression.

It is important to correct this symptom, and a permanent improvement is very likely to accompany the abatement of nervous symptoms, yet the latter does not follow with that speed and certainty which we should have a right to look for if melancholia were merely a sort of narcotism from retained intestinal toxins. There is as yet no distinct chemical evidence of such an action.

The secretion of the skin is as likely to be increased as diminished, so far as quantity goes, and I am aware of no observation as to its qualitative condition.

In short, we may say that while it is very important for therapeutic purposes that all the secretions should go on

properly, we cannot point to any one of them as more to blame than another as holding back excrementitious matter, nor to any one constituent as the specific poison.

The making of fat and blood are almost proverbially connected with the cure of nervous debility, since their development has been systematized by our distinguished countryman Weir Mitchell and his followers.

Blood examinations are not difficult nor time destroying to make, but are unfortunately wanting in accuracy, when dependent upon color comparisons as so many of them are. Many such have been made by myself, and afterwards the same specimen estimated by several of the nurses, who acquired a considerable experience. The discrepancies in the individual readings of the Fleischl hæmometer were usually decided and the averages varied between different observers within quite wide limits, and, what is especially unfortunate, the differences were not constant and no personal equation could be established by which the reading of one observer could be reduced to that of another. I found in my own case that I almost invariably read a higher percentage than any of the nurses, but the difference was not constant. I did not however obtain absolutely high results. I think the establishment of a physiological standard by a large number of observations and also some sort of approximation to the limits of error in personal equations, would be a very useful piece of work. In the hands of the same observer, however, for purposes of comparison the Fleischl hæmometer is a very useful and convenient one.

For the globular richness the hemocytometer of Hayem and Gowers, especially in the form now usually employed of Thoma-Zeiss, is, if a sufficient number of observations be made, an extremely useful instrument for diagnosis, but as many of you know, a most wearisome and time-spoiling one. A standard for this is needed also.

I have a strong impression, based however on too small

a number of observations to make it more than that, that the Thoma-Zeiss now in use would give a considerably higher average than a Gowers made in this country which I employed some years ago.

An extremely useful instrument, not requiring so much delicacy of manipulation as the blood-counter or the color tests, and giving, it seems to me, very trustworthy results, is the centrifugator or hematocrit as improved by Dr. Daland and Mr. Metzger of Philadelphia. This gives the actual proportion, by bulk, of red corpuscles in a large drop of blood and, with a little care, the white corpuscles too can be determined with a useful degree of accuracy. With this instrument and the Fleischl it seems to me that the condition of the blood can be followed with only a moderate expenditure of time, the numerical estimation and the differential examination of white corpuscles being needed chiefly for a single or repeated diagnostic examination.

When we speak of anemia, however, we have in mind two different conditions which are very apt to be confounded. By local anemia we generally refer to the bulk of fluid blood brought or remaining in the part, but when we talk of anemia in general, it is a question, not of bulk, but of richness in corpuscles and color, forgetting that it is just as possible that the total amount of blood in the body may be deficient as that contained in some portions.

This total quantity it is evidently utterly impossible to measure; in fact it is so difficult to measure even after death that the physiologists have been unable to get at it with satisfactory accuracy except by quite elaborate procedures. We can only guess at it by the color of the skin and visible mucous membranes, the tension of the pulse, and the rapidity of flow from a puncture and so on, which are all obviously only rude methods of making several local estimates to be combined into a general one. I have certainly found what seemed an abnormal difficulty in obtain-

ing from a puncture a satisfactory amount of blood for some examinations, on account of the sluggishness of the flow, in cases where the quality was not very deficient. There seems no reason why this total quantity might not vary considerably in different persons, as well for instance as adipose tissue; so that a person with a very good count as regards corpuscles and color might really be anemic, *i. e.*, not have enough blood to go round properly.

Speaking in a general way I should consider a large part of our patients somewhat anemic as to quality, *i. e.*, they have a count a little below the normal and a color a little below that again, as is well known to be the rule in symptomatic anemia, and the reverse of the relations existing in pernicious anemia. The quantity, had we the means of measuring it, I feel quite confident, judging from the complexion, the slow bleeding from punctures and the peculiar pulse and tracing, would be decidedly below the standard of health.

Hence many of them "pan out," so to speak, in the instrumental tests, better than they look and better in fact than they really are.

On the other hand extreme anemia, excluding cases of organic disease other than nervous, is not common. When found in a patient sent in with a diagnosis of some functional nervous trouble I consider that it calls for special care in the search for some underlying condition.

A very good blood color, *i. e.*, one of 75 or 80 per cent. Fleischl, is not at all inconsistent with serious and persistent debility and many nervous symptoms. I speak of this as "good" because I am sure that it may often be found in persons in excellent health. I cannot get much above this in my own person, and I have heard the same remark made by a colleague of sufficiently healthy embonpoint and rather an unusual (for an American) floridity of complexion. The statement has also been made by others that the standard

(100%=normal) of the Fleischl is set too high for the average American.

Thus a good blood count is of favorable import as regards the condition of the general health and, of course on that basis, of a favorable tendency as regards special nervous symptoms, but it is not at all conclusive as regards speedy recovery. One patient who had a color test of 87 per cent. has been an invalid ever since and has applied to be re-admitted. Another with 87 per cent. was somewhat relieved by local uterine treatment but said she never expected to sleep well again. Several others with from 75 to 95 as determined here have remained invalids for months after leaving, including one case of chronic insanity with delusions.

These cases are not brought forward as a basis for a rule, for the examination has not been made as a matter of routine. Most patients, where the general appearance coincided with the symptoms, were not examined at all in that way. One of the most striking cases was that of a woman whose appearance, emaciated, pale, worn and distressed, corresponded exactly with her complaints of pain in every part of her body, which we, as well as our predecessors and successors, found it equally impossible to account for or to relieve. We have heard that she has since been in an insane asylum. She had, however, two days after admission, color 75, corpuscles 4,650,000. Three weeks later color 66, and two months and a half later 76.

In fact, the relations of blood-richness, quality and local distribution may be best understood by a comparison to the water supply of a large manufacturing and business city and an outlying suburban district. A moderate diminution will not be allowed to interfere with the working of the important interests of the great centre but will be shown chiefly in the dirtiness of streets and a want of color in the outlying lawns and gardens, while, on the other hand, no

possible abundance, though it may make the wilderness to blossom like the rose, can restore business activity to machinery and apparatus which is not fitted to make use of it. If water wheels are broken down and rusted from disuse in a long continued drought they cannot be set going to advantage all at once by a freshet.

This comparison might be carried a step further by suggesting that the quality of blood, as well as of water, may vary in different parts of the same system. It is strikingly shown, not only by well known chemical results, but by the interesting observations of the younger Mitchell on the immediate increase of the red corpuscles after massage, showing that they must have been stirred up and put in general circulation from the deeper portion of the vessels just as a local freshet or energetic gang of loggers increases the logs in the river below. The time is too short to make a theory of new formation at all tenable.

It is more than probable that many of the nervous symptoms connected with disturbances of the circulation depend rather upon deficient blood tension, pressure and supply than upon its exact chemical composition. A person with blood of the richest quality may faint on very slight provocation if the heart's action is so depressed as to suddenly alter the cerebral pressure. On the other hand the frog's reflexes act for hours after his blood has been thoroughly replaced by a solution of salt. A similar result is seen in the rapid restoration from intravenous salt injections in the cholera patient, whose blood is too thick instead of too thin, and in other kinds of collapse, where a hemorrhage has drained the vessels of their contents as a whole, without any proportional impoverishment of any special element. The condition of the circulation in a considerable number of neurasthenics may be described as a too small quantity of blood which is a little "off color" pumped feebly into resisting arteries.

The general nutrition, as indicated by gain or loss of weight, is usually looked upon as having special significance with reference to prognosis and treatment in functional nervous affections, and increase in flesh with increase of nerve force as almost convertible terms.

It is highly satisfactory to have so simple a standard. Fortunately it is often correct, and cannot in any event easily lead to any harmful error, but it is worth pointing out that there are important and not rare exceptions to the rule.

A considerable and nearly constant rise of weight, in a case which is decidedly under weight to begin with, is undoubtedly of favorable import. It proves of course that the digestive organs are doing their work with effect, even if it should happen to be with some difficulty and discomfort. If this be accompanied with decided and more or less parallel gain in the specially nervous symptoms, like insomnia, headache, backache and general strength, the prognosis is decidedly favorable, not only as to speedy but somewhat permanent recovery.

Where, however, the gain is slow and slight and the nervous symptoms do not improve for some time, it seems highly probable that the patient, even if ultimately materially better, will be very likely to fall back again when the surroundings become less favorable.

If the patient be already of sufficient body weight the desirability of increasing it is not great, and if a gain is made, or at least any extreme gain, it cannot be considered an advantage.

These remarks apply especially to well marked neurasthenia and melancholia. Fat hysterics and demented are sufficiently well known.

A constant and decided loss of flesh is of course an exceedingly unfavorable condition, but I can recall at least one case where the patient made a fluctuating record of weight

with the ultimate loss of a pound or two, having been below weight to begin with, where the general improvement went on in a similar fluctuating way, but at the time of discharge was in every respect a considerable one. Generally the fluctuations which occur coincide pretty closely with the improvement, or the reverse, of the other symptoms. One case, however, being rather a stout woman of the flabby neurasthenic type, gained quite rapidly in weight for some months, and at the same time slowly as regards nervous symptoms. Then she fell off less rapidly but steadily in weight, but did not lose the gain made in other respects, and has continued to improve since. I do not, however, know the history of her weight after leaving the Asylum.

On the other hand there have been quite a number of cases where the improvement has been not only real but very striking, with but little, if any, increase in weight, and this too when the original weight was below normal.

Of course in cases in which the chief severity of the symptoms consists in digestive derangements the gain of weight is especially encouraging.

It is not only practically true but theoretically reasonable that the building up of all the tissues as indicated by body weight, although a most excellent, and in many cases essential, preparation for nervous repair, should not be all that is needful. The molecule of nervous protoplasm is undoubtedly a most complex one. It is the most delicate, most choice and precious of all living matter, and it is not to be built up by the same gross processes which turn starch and sugar into fat, or even gluten into blood-albumen.

Intellect, feeling, courage and will are not to be expressed in terms of potatoes or eggs or phosphates, even "vitalized," or alcohol or coffee.

The neuron is a growth, a structure, with its periods of increase and decay, and it is a view which leads to imperfect practical results to look upon it simply as a reservoir in

which energy can be stored up at will by a mere outside pressure of nutritive material.

It is undoubtedly true that every nerve process has its equivalent in a chemical decomposition, but it is not possible to reverse the process and make chemical, electric or any other force into nerve action at will, any more than it is possible to make the whole of the mechanical energy of a pound of coal into light without the greater portion of it going inevitably to less subtle and less desirable forms of force. The most that can be done is to present an abundant supply of material from which the nerve cell must select and build up according to its own law of growth.

I have no doubt that in many cases where we see a parallel improvement in weight and in general recovery of nervous tone that the general nutrition is favorably influenced by the restored function of the trophic nerves in stimulating secretion and growth, quite as much as because an excess of nutriment has been presented to the nervous centres.

People generally grow fat because they have ceased to worry quite as much as they grow cheerful because they have become corpulent.

Cæsar says indeed :

“ Let me have men about me that are fat,
Sleek-headed men and such as sleep o’ nights :
Yond’ Cassius hath a lean and hungry look :
He thinks too much : such men are dangerous.”

But the Scripture has it (Deuteronomy, xxxii. 15) :

“ But Jeshurun waxed fat and kicked : thou art waxen fat, thou art grown thick, thou art covered with fatness : then he forsook God which made him, and lightly esteemed the Rock of his salvation.”

If we exclude the distinct hysterical element for which numberless theories have been framed, it is by no means easy to make one which shall cover all the cases in which

nervous exhaustion seems to play the principal part, and the chief difficulty appears to lie in those not very rare cases where the assignable or assigned cause is entirely inadequate to the effect claimed, and yet where the result is approximately the same as when the exhaustion is the legitimate consequence of actual and excessive overwork and anxiety, or overwhelming shock.

We can understand why successive, perhaps unexpected, deaths of near friends, perhaps after an exhausting period of nursing, should produce a complete temporary loss of mental vigor, and an absolute inability for action or decision, as well as many disturbances of the nutritive functions; but when a somewhat similar condition is supposed to remain for many years after the peaceful death of a parent at a good old age, except by assuming that immensely greater differences exist in nervous susceptibility of different persons than can be detected in regard to ordinary diseases, it is difficult to make the same anatomical explanation cover both cases.

We have now accurate anatomical descriptions by Hodge and his successors in the work, of the appearance of exhausted nerve cells under the microscope, showing that they undergo decided changes after rest and action identical with those to be seen in other cells, those of the stomach for instance, when in a state of functional activity or the reverse.

The condition of permanent exhaustion has not, to be sure, been directly observed in the same way, and it is doubtful if it ever will be, since the changes are of a too delicate kind to be preserved for hours after death, while, experimentally, it would be difficult to imagine a method of imitating the kind of constant irritation which brings about this condition in our own species.

Perhaps the victims of the abominable experiments of Mantegazza might have furnished material at a price infinitely beyond any possible advantage from such refined cruelty.

The nearest approach is perhaps to be found in the lesions of chronic insanity, which are, however, even now not clearly ascertained, except in general paralysis, where they are, as you know, of a more fixed, and probably of a more obvious, character. In the latter disease, we have, in a large proportion of cases at least, toxic and diathetic causes at work, in addition to the simple chronic congestion of over-excitement.

As I have already suggested, it is doubtful if the lower races, and even certain classes in civilized society, have the structure which fits them for the undesirable privilege of "nervous prostration." It has sometimes seemed as if that objectionable, but indispensable, phrase were used with a slight savor of pride, as if like gout, a liability thereto testified to a sort of mental superiority, or even a more advanced social standing.

Probably more than one generation may be required for its full development.

Heredity cannot easily be traced statistically, for the reason of the indefiniteness of the terms in which we describe and distinguish the nervous susceptibility, and also the controlling influence of personal feeling and theory in the testimony of relatives; but no one can deny its great importance, even if it is impossible to put it in figures. The difference in susceptibility, congenital or acquired in the early years of life, is the only way in which we can reach anything like an explanation of the great differences in the magnitude and effectiveness of the exciting cause of nervous breakdown. It seems necessary to assume a much greater variation than exists in regard to most bodily qualifications. No man is twice as tall and very few half as tall as the average, but it seems as if we should be obliged to express nervous endurance in terms of tens and hundreds, if we could measure it in figures at all, in order to cover the possibilities of the strain under which it is likely to give way.

Whether this difference depends upon complication and delicacy of nervous arrangement, or whether it is simply a matter of the mass of protoplasm or of nuclein, or whether, which is much the more probable, it resides in a recuperative power which is not expressible anatomically, is a question impossible to answer. Practically, nervous resistance is undoubtedly somewhat increased by the best general nutrition and very distinctly impaired by the reverse, but the extent to which it can be built up in advance by general nutrition is probably not very great.

Deficient and impaired nutrition of long duration may render permanent a stunted or misdirected nervous growth that might under more favorable circumstances have become normal.

Intellectual occupations, that is those involving a cerebral activity above the average, will undoubtedly contribute the larger number of nervous invalids (always however leaving out the hysterical), but it is not of so much consequence what the kind of labor is or how high a grade of intellect is involved, provided there is no undue susceptibility and also that the conditions under which it is done are not unfavorable. This implies of course that the labor should be fitted to the capacity of the individual.

The institutions for the higher education of men or women show no undue proportion of nervous breakdown, and it is just as easy to find typical examples among teachers and scholars in the public schools of lower grade, where the purely mental strain is probably no greater, or at any rate the intellectual results are no more valuable, but yet the conditions are of a distinctly worse kind, in the multiplicity of the exactions, the utter want of adaptation to individual capacity, and probably, worst of all, the unhealthy stimulus under which it is done. A patient whom I knew fifteen or more years ago, before she came to the Adams Asylum, used to date her final breakdown to a school essay on the

Geneva conference, none of the original participators in which, whose opinions were presumably quite as carefully and laboriously formed, seem to have shared the same fate.

It is probably unnecessary for me to remind you of what public school teachers are supposed to know, but the following list was obtained from a girl of twenty-four who was teaching up to a day or two before her entrance :—Geography, arithmetic, reading, writing, drawing, music, composition, a little grammar, orthography, gymnastics, zoölogy, botany, a little geology and mineralogy, physiology, which very interestingly was made to include hygiene (mental?) and the use of intoxicating liquors. Latin, French and German I understood to have been just introduced into the course, perhaps by way of diversion after hours. Whether she went to a party or two during the week I did not learn, or a bible class Sundays, but I find in my notes "four supervisors' meetings per week," which it is easy to imagine were not occasions of unalloyed happiness.

The influence which converts healthy fatigue into a pathological condition, too often permanent, is the stress and worry under which work is done, and in this way occupations which involve no harmful amount of intellectual labor come to have disastrous results. This is why teachers and students furnish so large a proportion of our patients, and why those that have "no occupation" surpass them. "No occupation" is likely to mean a dozen different ones, for none of which has the person any special aptitude. It is not the work done, but the driving.

They study, not to know something, but to pass an examination on it; not because they are interested in it but because some one else has studied it and it is a good thing to do, and they do not wish to be left behind; not because the girl cares anything about Greek, but because Greek has been taken as a sort of standard for so-called scholarship in boys and she wishes to glorify her sex and show the world that girls can do anything that boys can.

Such cases, however, are the less serious as being more frequently and more easily avoidable. In by far the greater number which we see, the element which changes physiology to pathology is not so easily got rid of. Household and business cares never relaxing, anxious work with no holidays, often two kinds of work, the worry of the school-room exchanged only for the worry of an invalid's sick room, or for the preparation for new examinations to retain the old places or to secure the necessary promotion.

Bodily fatigue, if taken not in the form of exhilarating out-door exercise but involved in the daily occupation itself, like continuous standing or working a machine, is a potent adjuvant.

All sorts of combinations can be imagined, but the one essential condition is worry and drive. To the fortunate individuals who do not allow things to worry them; who let their creditors walk the floor, instead of doing it themselves, when the note is coming due; whose business is done when they shut up their books for the night; who shed all their own and their neighbors' troubles as the duck sheds water, brain work is as healthy as any; but those people are rare. The New-England woman who is undertaking, with perhaps insufficient equipment, a career just a little beyond her real mental strength, which she must follow for her daily bread, or driven there by a social ambition, which is no unimportant factor in such cases, or even by the proverbial "conscience," is in a dangerous position. If you will pardon the phrase, which I have no doubt is already in your minds, when she has "bit off more than she can chew," her danger of nervous dyspepsia, both in the literal and figurative sense, is very great.

Such cases are not difficult to understand or to deal with in their earlier stages, but they may, by their persistence and neglect at that time, by obstinate fighting against the weariness which is nature's call for a halt, get into a less manageable form.

We do not know of an anatomical condition of the nervous centres akin to distorted bones and ligaments, but the comparison is not a forced one when we find mental and moral distortion growing out of such cases and restorable with difficulty if at all, just as an inflamed joint becomes ankylosed or a stoop or twist or callus becomes fixed and irremediable. The neuron is a growth, a structure, and not a mere reservoir, and it is possible that those delicate networks which induce the action of other and yet other cells, so delicate that until a very few years ago no one had even suspected their existence, may be just as confirmed in their abnormal connections as if they were bones.

It is not impossible that we may one day see the growing sclerosis of the intellectual centres as we do that of the spinal cord, or recognize under the microscope that ideas have been so long centred upon self and suffering that it is as impossible for them to take any other course as it is for the electric fluid to go through a bad conductor to do useful work after it has established a short circuit in another direction.

Attention constantly turned in upon its own painful surroundings impedes healthy mental action as an ingrowing toe-nail impedes healthy locomotion.

We have then, as the simplest form of invalidism, the chronic neurasthenic, not perhaps melancholy or unhappy, but sensitive, self-observant if not selfish (and how indignantly would she repel this insinuation), hypochondriac, and useless.

A very curious and important variety of this class is one which seems to have etiologically no connection therewith, but which, when it progresses, shows so many common features that we cannot help acknowledging a close relationship between them. This is the invalid with nothing to do, and who requires a household to help her do it. She has had no hardships, she has studied moderately at school, and

perhaps has had a fall or an acute sickness, but she does not convalesce beyond a certain point, and is, or thinks she is, as helpless as the other. She is apt to think that all she wants is "rest," when she has never done anything that ought to tire her, and has done nothing but rest for years.

If we apply to the nervous end of the motor apparatus certain well-known principles which are familiar enough in the pathology of muscle, the paradox diminishes. Muscular atrophy from overwork is recognized, and often persists when the over-use is discontinued. The "writer's cramp" is a not altogether dissimilar condition. On the other hand, we have the atrophy from disuse, as in the limb kept too long in splints.

The same sort of judgment that is needed to know when the passive and active motion of an injured limb should be begun must decide when nervous rest should give way to exercise of the will.

It is when a fixed idea has grown and flourished upon the soil of neurasthenia that we get the most thorough going and confirmed invalidism. This fixed idea may be of gradual growth from long habit or a more rapid one from shock, forming the centre around which revolves the whole thought and being of the patient. On the other hand, according to the language now employed in the analysis of hysterical and hypnotic phenomena, it may reside in the subliminal consciousness, controlling thought and emotion without rising into the level of the patient's ordinary knowledge, and to be best discovered and combatted by means of hypnotism.

Here we find the hysterical neuroses, the anæsthesias, the paralyses and contractures, the obstinate vomitings, the neuralgias and aphonias of the severer and more chronic types.

We meet here even actual organic changes in the form of muscular wasting, stiffening of joints and muscles, not yielding permanently to passive motion or temporarily to anæsthetics. Perhaps even scleroses may be developed.

Whatever may be the anatomical and clinical changes in nervous structure resulting from long disease or the dominion of the fixed idea, there is little doubt, clinically speaking, that some influence may, after a time, render the lesion as permanent as if it were of the most pronounced and organic character. As tersely expressed by a witty friend, "nervous protoplasm is endowed with a long memory."

At what period this takes place and after how long a time, we can only approximately judge in cases where some part affected is accessible to vision and manipulation, as in the case of contracted limbs, or by the electrical reactions and the conditions of the reflexes.

It is perhaps a somewhat rash assumption to infer that psychic lesions and those of the limbs under their influence run parallel to each other, but actual trial is the only trustworthy test in either case, and it is, of course, much easier to apply in the latter condition. Where skilful and assiduous massage and passive motion fail for months to produce any return of flexibility to joints or strength to muscles, it is highly probable that the psychic condition will be found equally obdurate. In one case, where the massage of stiffened and resisting limbs was successful, and after a time the patient became able to walk, it seemed to me that the obstacle in the nerve centres was quite as great as in the limbs, and certainly much longer lasting.

The point, expressed in anatomical language, is to know how far in the first place the paths of conduction from motor centre to muscle are intact, how far there is simply enfeeblement of the centre, and lastly how far an apparent enfeeblement is counterfeited by inhibitory impulses from other cerebral centres, and in particular such as are controlled by the subliminal consciousness or a fixed idea. In other words, how far the motionless limb is actually paralyzed, how far the patient cannot will to move it, and how far she thinks she cannot move it.

The influence of shock, not in the surgical sense, nor meaning concussion of the nervous centres, is of great importance. Not a few of our patients refer their ultimate breakdown, usually not as the whole cause but the determining one, to a mental shock, frequently, for instance, the sudden death of a friend. It seems capable of taking the place of much chronic cause of depression, and, where the conditions are such as to receive and emphasize its full effect, to be as permanent in its action as the slower forms.

The question of real and visible lesion in the so-called "traumatic neurosis" and the relation of mental shock to physical concussion in such cases has been much discussed. If, as shown by Hodge and others, constant slight irritation produces organic and visible changes in the nerve cell to which it is transmitted, it is reasonable to suppose that an extreme but short series of irritations may do something similar without the intervention of any gross lesion whatever. Railroad cases are almost certain to be complicated in this respect, for it is almost impossible to exclude the influence of both mental and bodily shock.

The clinical manifestations of a purely psychic shock are, however, manifested as clearly and sharply as can well be imagined in a case reported by Dr. Jelly in the *Boston Medical and Surgical Journal*.

A man, previously healthy and temperate, fell, without losing his consciousness, on the track in front of a rapidly approaching train. He was practically uninjured and managed to roll quickly off to one side, so that the express train passed close to him without touching. This man lost his speech for many days, and for months manifested the most extreme form of nervous prostration and hysteria, with special dread, as is not to be wondered at, of anything connected with the sight or sound of railroads.

A somewhat similar case is reported by Derode, *Arch. de Neurol.*, March, 1895. A girl was barely rescued from.

death by a train, but without injury. Loss of consciousness, hysteria and melancholia. Experts called it traumatic neurosis, hysteriform, probably incurable. But there was no trauma except psychic.

We find in the history of our 1000 cases, shock mentioned sixty times, and accident no less than one hundred and nine. In a large proportion of the latter a fall is specified, and not unfrequently a fall upon the back.

It is true that it was not always claimed that the fall was the only, or even the chief cause of the nervous condition, but it frequently occupied a very prominent position in the patient's mind. Only a very few of these accidents seem to have been severe, and in fewer still was there any question of damages, so that the element of "expectant pecuniosity," as it has been pithily called, was not in them at all. But for all this the fall was undoubtedly a factor in the psychic condition of the patient, and although the hope of damages may, in appropriate cases, undoubtedly be a hindrance to recovery, it has had very little importance with us.

A victim of the "Bussey bridge" disaster, who, as in so many cases, was able to walk some distance immediately afterward and lost strength only after some hours, came to us the second time long after damages had been finally settled, and yet in a condition of partial paraplegia which was supposed to be, and from the rapid improvement evidently was, of a purely functional character.

In all probability nine tenths of these falls would have been utterly without significance in persons of normal psychic stability, while, occurring in those having the hysterical diathesis, congenital or acquired, a nervous over-impressionability, they form a very important factor in making the chronic invalid of the quiet but pronounced type.

Melancholia should hardly be included in our scheme of chronic invalidism, not of course because a melancholic is not an invalid and a very serious one at that, but because it

is something more and also something less ; more as regards the immediate severity of the symptoms, which often brings it distinctly into the class of insanity and less in regard to its average chronicity. I cannot agree with my learned and philosophical predecessor and friend, Dr. Edward Cowles, in considering melancholia merely a further development of neurasthenia, although there are certainly very close connections between the former and the acuter form of the latter ; and although it must be acknowledged that neurasthenia may put on the melancholic type.

Melancholia seems more like a self-limited disease with a beginning, a middle, and an end ; although, of course, like other self-limited diseases, it may in unfavorable cases run into a chronic condition.

Neurasthenia has a beginning and a middle distinctly enough, but a vague and uncertain ending. I believe the statement to be a sound one that the prognosis of neurasthenia is unfavorable, not in proportion to the apparent severity of the symptoms, but in proportion to the time during which they have been present.

Melancholia appears to fit much more easily into an auto-intoxication theory, possibly of intestinal origin, than the milder, more chronic, but more obstinate hysteroneurasthenia, with its more purely psychic origin.

One of the remarkable points about some of the most typical melancholias, which makes a highly important distinction from neurasthenia, is their absolute causelessness, so far as can with the utmost care be discerned, in the environment. It is seen in those who have not a visible care in the world and from whom no enquiry can elicit a trace of secret sorrow. In the acuter forms of neurasthenia the apparent cause is usually simple and more nearly adequate, in proportion, that is, to the resisting power of the particular nervous system in question.

Some years ago I saw a man who had just been taking

a trip abroad for a profound and causeless depression for which he found no relief. He assisted in detailing the circumstances of his life. Of excellent habits, irreproachable reputation, freedom from pecuniary trouble, with a steady occupation involving no overwhelming responsibility, and in which his employers allowed him to take his own course, some literary employment which gave him much or little to do as he liked, he pointed out to me the blessings he enjoyed of an excellent and exemplary family to whom he was devotedly attached, a pleasant residence and other material sources of happiness with which he was surrounded. Yet in three days after this conversation he knelt down in front of an express train.

The typical neurasthenic invalid does not kill herself.

If it were possible to devise a scheme for promptly and infallibly restoring the chronic nervous invalid to working power or even to the point where she would no longer be a burden, the benefit to the community would be somewhat like that which comes from diminishing the cases of phthisis or typhoid in adding to the effective working force of the world and diminishing the amount of non-effective labor. The invalid is likely to belong to a class, to be of the time of life and possess the mental capacity to make her working ability of great importance to her friends and the community. Her restoration to usefulness makes life easier for herself and a circle around her. I am not of those who can see in a multitude of beautiful examples and teachers of patience a sufficient recompense for the suffering, and waste of life and opportunities. Involuntary teachers of patience are useful up to a certain point, and I think they will never fail; but that profession is overcrowded with those who can never do anything else and calls for no amateurs. The deficiency is not in teachers but in scholars. What is of quite as much importance is that some of the most distinguished professors of this branch of instruction do not do it well.

Patience under afflictions which can be removed is no virtue, and the "sweet sufferer" does not elevate the moral tone of the neighborhood so much as might be supposed, especially when it begins to doubt the genuineness of the specimen exhibited as an object lesson.

It may be supposed from much that has been said that fattening and blood making are not always sufficient for a cure, a fact already familiar. We have seen the invalid who is fat and florid, and, on the other hand, the thin and apparently anemic doing useful and trying work without breaking down. If the circulation can carry a limited amount of healthy blood from the digestive organs to a healthy brain it will do the work, even if the mass be small and it does not brighten the cheeks or stop on the way to deposit adipose tissue. It is another case of the nimble sixpence better than the slow shilling.

Still it is undoubtedly better to have the soundest, most substantial and securest foundation to build upon. Business can be done upon a small capital, but it is more secure from accidents upon an ample one. We are not to neglect or look with indifference upon the building up, so far as possible, of the general nutrition. In fact we can look for little success when there is an absolute failure, and not merely an apparent partial one, in this respect. Except the improvement of essential symptoms which we are seeking to remedy, there is no other one test of success which is so trustworthy as a gain in weight; and it may precede the others. Only one need not be utterly discouraged if the gain is not a very striking one.

The general nutrition is one of the handles to raise the patient from her condition of invalidism, and it is the easiest to get hold of. Unfortunately one handle is apt not to be enough.

Corresponding to the feeding should be suitable attention to the excretory organs, and for this purpose one soon

has to become familiar with the whole range of laxatives, no matter how advanced his theoretical views as to the treatment of constipation by diet, electricity and massage. An occasional old-fashioned mercurial is not to be despised. Nitrogenous elimination is to be promoted by the use of water, sometimes slightly alkaline, though this is not usually of great consequence.

To think of rest as a new discovery for the cure of fatigue would be equally ingenious with inventing a food cure for hunger, but, for all the apparent simplicity, mistakes are possible in the application of both remedies.

If we consider again the physiology of fatigue and repair, as shown in the nerve cell, which we may regard as the differential of that highly complicated function cerebral activity, we find that it is a matter of a few hours, so that in the birds, for instance, which were examined by Hodge, it was embraced within the limits of day and night. Although we know very well that human cerebral activity may continue much longer under special excitement, there has never been the least reason to doubt that this diurnal period is the least exhausting, as it has always been the usual and natural one.

Even a shorter period has its advantages especially in the way of prevention. The American business man's hurried lunch might well be developed into the usual dignified siesta of hot countries.

We cannot be too firmly convinced that the nerve cell is a living growth and not a mere reservoir. The figure of speech often made use of in describing the origin of neurasthenia, *i.e.* as a bank account constantly drawn upon without corresponding deposits, is an extremely erroneous one in the respect of implying that, no matter how low the amount may go, it can be set right again at once by a single sufficient sum. This is certainly not true of nervous exhaustion in the more chronic forms.

The neuron has two functions or modes of action ; one is to originate and transmit stimuli either to a muscle or to another neuron, and the second to maintain its own capacity for the conversion of energy. The first of these is necessarily carried on at the expense of energy, with definite chemical changes, but the second is a more subtle inherent property dependent on heredity, education, and many other influences, the diminution of which is purely pathological.

Too great a prolongation of the period of fatigue, too many and too unremitting repetitions of the slight irritation, a shock too great for the normal reaction, produce not only a drain of energy but more or less impairment of the capacity for reproduction, or an actual change in the habit of growth, so that it is no longer capable of being made whole, either by a full supply of nutritive material or simply a prolonged rest, equal to the period of fatigue. If we wished again to resort to the business simile we might compare the nervous system not to a bank account, but to a manufacturing establishment where the demand for its products and for dividends has been so great that nothing has been spent to replace the worn-out machinery, and it has finally come to a forced standstill. Then, not only money but time and labor must be spent to get it into working order again.

We know that healthy function is not restored by rest alone. We do not expect to bring back motion to the paralyzed limb by putting it in a starched bandage ; and activity is to be restored to the disused neuron by gentle and increasing exercise, just as it always is to the disabled muscle. The point at which this is to be begun is the point where the judgment of the physician is needed. Perhaps in the future some of the tests of the psychological laboratory may give us a more definite stand point.

How common it is for a patient of this class to tell us

how she has been set back by what she considers premature attempts to get up and do something, and, on the other hand, how often does the suspicion arise that what is supposed to be profound exhaustion comes extremely near to indolence, fear, habit, and want of confidence. One is often obliged to defer somewhat to the views of the patient and her friends and proceed with more timidity than his own fears would dictate. Delay and caution may be called for, not because there is real danger, but because it is necessary to establish a relation of confidence with the patient, and avoid the suspicion of rashness.

The question of sleep covers a good deal of the same ground as that of rest, but not the whole. It is not unusual to meet with patients who get a very fair proportion of sleep in the twenty-four hours and are yet incapable of mental effort during the remainder. In others it seems that the return of sleep is much more a consequence and sign of returning nervous vigor than simply a means of establishing it. Without it we can hardly hope for a sound recovery, but it does not follow that because the normal daily expenditure of nerve force can be completely made up by the nightly rest, or even that of two or three days, that the accumulated deficiency of a year can be made up by a corresponding number of extra hours. The nerve cells have not only expended their energy as fast as produced but have lost the capacity for storage.

What has just been said applies chiefly to the plain and simple forms of nervous exhaustion. The case is different when the fixed idea, conscious or unconscious, is added: when the machine has not only its driving force diminished but when some foreign body blocks the wheels.

Feeding and rest cannot always, perhaps I might almost say can never alone, dislodge this. It is probable that general nervous depression favors the domination of the fixed idea just as under-feeding does infection by acute

febrile disease, and undoubtedly a restoration of general health and strength is of great advantage in the one case as in the other. Sometimes it is the only thing which can make a complete cure possible, but a nervous warp or twist may be as obstinate as one involving bone and ligament. We see this in the most striking way in inherited mental traits which are as permanent and distinct as features, color, size, or disease tendencies. Insanity breeds as true as phthisis and more so. Acquired tendencies are, indeed, often much less permanent, but the fixed idea is not the same thing as a whim of the imagination.

The psychic element in invalidism is to be controlled by psychic means.

We find among those who have been with us and who have been discharged without complete or permanent relief, no inconsiderable number who refer their recovery, or what they consider as such, to some one of the many forms of empirical treatment, now so much in vogue under names familiar to you all, which have, like other fads before them, been erected by their cultivators into a kind of religion. I do not suppose that our inquiries have resulted in anything like a complete account of these cases. We have known of some who have not reported themselves, a few have stated that they tried so and so with no good result, and it would not be human nature if the favorable cases were not more readily reported than the unfavorable ones. Such things have happened in more scientific circles. Making all allowances, however, I think it is well to look the fact squarely in the face that some persons do receive great benefit from some of these forms of treatment who have failed to do so at the hands of regular and skilful practitioners. These cases should be studied and not contemptuously waved aside. *Fas est et ab hoste doceri.*

Presumably most of us believe that the days of miracles are over, and that these cases do not furnish any exceptions to the ordinary laws of mental physiology.

But we have not to look to these sects alone for cures of this character. They have been happening under all sorts of names and schemes. Besides those openly claimed as wonder cures it requires no great stretch of the imagination to suppose that many such attributed to this or that drug, spring, bath, or physician, have been of this character. They swarm, more or less well interpreted, in medical literature.

There are those, even among our neurological brethren, who hold that many of the good results of electrical treatment, especially by the static current, are largely due to their psychic influence.

Notorious practitioners have removed fictitious tumors and opened abscesses for which they had themselves to provide the pus, charging extortionate fees in order to keep up the "moral" effect. Medical and religious history abounds with the records of cures made by appeals to the faith and imagination in all sorts of ways, and it is generally well recognized that they are wrought largely in the class of cases we are now discussing.

It is not, however, a very dignified position for a physician to occupy when he makes such explanations for the first time for the purpose of belittling some cure of the kind which has been reported to him. They are probably perfectly correct, but, when brought forward at such a time, they lay him open to the very obvious retort: "Well, if you knew all about it why did not you get the same result?" or, "Why did you wait for somebody else to make a cure before you made a diagnosis?" Such questions as these we should ask ourselves with calm judgment rather than wait to have them asked of us sarcastically at a time when the true answer cannot be looked upon otherwise than as a mere excuse for failure.

The answer is twofold. First and foremost, physicians ARE constantly doing the same thing consciously or uncon-

... ..

sciously. They always have done it since there were physicians, and always will, no matter what the changes of pathological and therapeutic theories. The physician is not likely, like some politicians, to ostentatiously parade "personal magnetism" as a portion of his outfit, but he may have it, and it is undoubtedly true that, other things being equal, he who possesses the complete confidence of his patient will have the best results, without reference to the subordinate consideration that the patient will follow his directions most carefully.

This fact is sufficiently well recognized, but, for the very reason that it is every day and commonplace, it is frequently lost sight of. If an invalid recovers under the care of her trusted family physician her friends are satisfied indeed, but not astonished. It is not heralded through the sewing circles, the social calls and the confidential chat as a wonderful event. It was the doctor's business to cure her and he did. Good doctor, but no miracle about it. If, however, the case does not go so favorably; if he fails to impress her imagination, being nothing but a plain, common-sense practitioner, with no halo of specialism, no romance, no slight uncanny flavor about him, and she then goes to a miracle-monger and recovers, the case is very different.

Let me briefly mention three illustrative cases: One of the earliest patients of the Adams Asylum, in answer to our inquiries, attributes her cure, which has been a permanent one, to "mental healing," but further describes the process as having been convinced by the physician of the Asylum that the organic disease of the stomach, which she was sure existed, was not real.

A second convinced herself that the promises of the Bible as to cure by faith were made to her, just as well directly, as through the hands of any other person. She had faith and was made whole. Her own account of the case was published and she has been a useful woman for many years.

The third suffered, with a perfectly serene countenance, excruciating pain. I find that she was discharged "relieved," but she went to another institution where a person, at that time well known, prayed, laid his hands upon her, and she got up and walked. The case obtained considerable newspaper notoriety at the time and the patient became an apostle. She, however, now thinks that a year's rest at the asylum would do her much good.

The physician possesses the advantage over the charlatan of a knowledge of pathology and diagnosis. The charlatan possesses the advantage over the physician of ignorance of exactly the same things. The air of confidence is a very subtle one and the perceptions of the patient acute. She is apt to know well whether the physician is telling her what he fully and firmly believes himself, or whether he is making some mental reserve, and his influence is controlling or the reverse accordingly. How can he assure a patient that her vomiting is purely nervous when the faint suspicion lurks in his mind that his encouragement may be interrupted by a hemorrhage or perforation, or tell her that her headache, though painful, is not dangerous, when the next hour may reveal to him a double optic neuritis? The curist knows or cares nothing about these possibilities, and the corresponding confidence in his voice and bearing are tempered by no hesitation or reserve. He may also steal from his rival, and get a working diagnosis ready made.

The patient who has gone from one physician to another and another seeking relief from symptoms which get no better and no worse, for which no organic cause can be found, may be shrewdly suspected to belong to this class; or at least the charlatan can do no worse than his learned and distinguished predecessors, even if he fail; while, if he give assurances stronger than their knowledge of pathological possibilities allowed them to do, he may accomplish that for which they only paved the way.

Why one person should have this effect more than another it is indeed difficult to say, but no more so than in many other situations where personal influence seems to rest on anything but the reasonable foundations that one would naturally expect.

A former patient, a bright, intelligent girl, suffered after her discharge from constipation as she had done before. After trying various persons she at last settled upon one practitioner of a popular fad as the one for her.

"What does she do?" she was asked.

"Oh, she sits and looks out into space."

"And what do you do?"

"Oh, I sit and look out into space. Then I go home and have a movement of the bowels; but I can't do it alone."

There is no reason to suppose, however, that this influence is of any extraordinary character. There is nothing in these psychic therapeutics to induce a belief in any communication of nervous force or in any telepathy. The influence undoubtedly reaches the nerve centres of the patient through the ordinary channels of the senses, and the recuperative force just as undoubtedly originates there. It is simply set free by an external stimulus, or else the opposing inhibitory force of the fixed idea is removed.

There is no doubt that the peristaltic activity of the intestines is under nervous control, and that there is a continuous connection of the local plexuses with the highest nerve centres. Yet we are only too well aware that no amount of reasoning on the propriety of setting that mechanism in action, and no amount of firmness of intellectual conviction is sufficient to produce the desired result; but we know that habit, without conscious cerebral action, sets the apparatus in motion, and also that an unusual cerebral impression entirely disconnected with any idea of intestinal action, like fear for instance, may do so.

It appears necessary that the influence which is to promote such a psychic change as must take place in cases of hysteria and consequently in many of chronic invalidism, that which is to make the cerebral hemispheres again resume their control of the muscles, which is not merely to diminish the extreme sensitiveness to pain and fatigue, but inhibit that active search for it so commonly seen; that which is to set flowing again that nervous current which promotes nutrition; in a word that influence which cures, whether in the hands of the physician who has studied the case and who knows it scientifically, or of the charlatan who makes no pretence to such knowledge or shrewdly guesses at it from the failures of his predecessors, must reach that psychological region that is not in full view of the ordinary consciousness, the so-called subliminal consciousness.

It is apparently in some lower stratum of cerebral action that intellectual convictions are moulded into confidence, desire and activity, and there also apparently the same convictions may arise without the intervention of distinct perception or logical reasoning. There are those who hold that this region may be reached most quickly and certainly through hypnotism, *i.e.* the patient is made more receptive and suggestible thereby. We have seen how it is reached by methods which have but little to do with the reason, and much with mystery and marvel. It is certain, however, that these are not the *only* channels through which an impression can be made, and it seems probable that when the physician, by beginning with the ordinary consciousness and by oft-repeated direction and encouragement, sometimes amounting to a re-education, can stimulate the motor powers of the will and set them free from the inhibitory control of fear, habit and hypochondrical delusions, the result is quite as complete and permanent a one. This comparison, in my relative inexperience with other methods, I make with considerable diffidence.

Different persons in their normal mind vary immensely as to their persuadability and reasonableness, and the hypnotists recognize as well the same distinction in the susceptibility to their influence. It is probable that the two qualities are closely allied if not the same, and it seems not only reasonable but strictly in accordance with observed facts to suppose one avenue of approach more practicable in one set of cases and another in another.

A firm conviction, unreasonable, unaccountable, absurd, even almost unacknowledged by the patient, is a more powerful moving force than an intellectual conclusion, no matter how soundly based upon facts and logically constructed, but if the one can be made to support the other, no matter which goes first, we have a more active and constant force than either alone can give. The learned and skilful physician can argue with his patient that having no organic disease and having thoroughly rested, she ought to get well. If he can make her thoroughly believe it she will get well, but if only half persuaded that she is going to do so, it may require the mysteries of some patent cure, perhaps in the hands of an ignoramus (and more effective for that very reason), something which impresses the feelings as well as the intellect, which soaks into the lower stratum of consciousness, to complete the work and give that little shock which shall start the machinery already in working order but motionless.

Many of the agencies of the simplest character in use in the treatment of nervous invalidism are of value, not so much because they actually contribute strength, as because they convince the patient that she already has it. Gymnastics are of quite as much value because they oblige her to take a definite initiative without hesitation and on order, which massage and electricity do not do, as because they increase muscular strength. They undoubtedly do good by promoting muscular development, but they do at least

as much by convincing the patient that she can herself move her muscles with ease.

There is often no more obstructive frame of mind on the part of a patient than a highly logical and intelligent one, or, better, the belief that she has such a one and the desire to exhibit it.

An argumentative patient can always have a reason ready, if she be inclined in that direction, why each thing that is ordered by her physician is exactly the wrong one for her, however well it may be adapted to those of ordinary mould.

As we all think,—

“ Whene’er we groan with ache or pain,—
Some common ailment of the race,—
Though doctors think the matter plain,—
That ours is a peculiar case.”

Pride in her own case is a sentiment which it is highly important to retain upon the side of the physician. If it take the form of an ill-concealed exultation over its difficulties and obscurity, or the patience with which sufferings are borne, the number and distinction of the physicians who have been consulted and their discomfiture therein, it is naturally a most unfavorable element. If she say in effect, “ I defy you to cure me,” she will probably be the victor. But if it move in the opposite direction and the patient, whether from her own usual mental condition or led by persuasion and personal influence, or some less commonplace motive, believe that she is standing on a higher mental or moral plane than her neighbors, or that her recovery is phenomenal, and that she is performing wonderful feats of strength and endurance, it is of the greatest value. She is your strongest ally.

Expectant attention is a very different, and for therapeutic purposes a much better thing than argumentative

and combative attention. In a receptive condition, either natural or induced, the truths of which the patient may have been previously intellectually convinced, assume a controlling position over the will and motor functions. The doctrine becomes a force.

Nervous invalidism is a psychosis, and the study of it is a branch of morbid psychology.

It is very possibly associated with actual changes of a chronic character in the neuron, analogous to those which have been found as the result of fatigue.

It is, to a considerable extent, the consequence of congenital conditions, or of heredity, *i.e.* of the transmission of an enfeebled or distorted nervous system.

On this basis the fully developed condition may be acquired at any time, though most easily in youth, either gradually or as the result of special strain or shock or acute disease.

It varies from pure nervous exhaustion on the one hand to pure hysteria and insanity on the other, but most chronic cases stand somewhere between the two extremes.

The foundation of a rational treatment is a diagnosis, a diagnosis by exclusion, not simply a recognition that the patient is weak, anemic, hysterical, and nervous, but a conviction so founded on a thorough examination, and so firm that it can be confidently imparted to the patient, that the symptoms do not depend upon structural disease of the organs with which they appear to be connected.

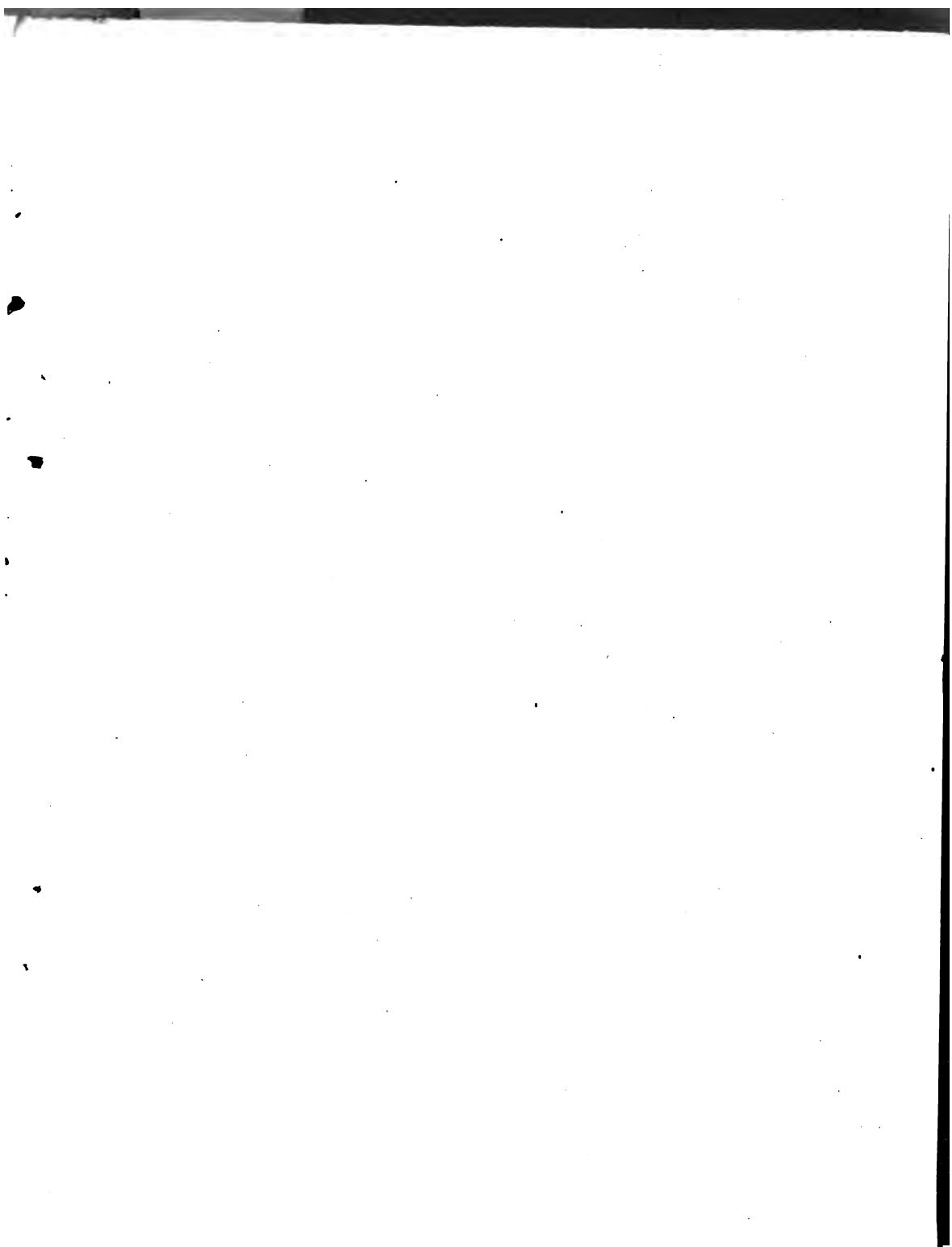
There are no organs which may not be involved, but by far the most commonly so, and calling for the most circumspection in diagnosis and care in treatment, are the pelvic and digestive.

On this foundation the treatment consists of three essentials, any one or two of which may take the lead in the individual case.

Food to furnish material for the growth of the neurons.

Rest to give time for them to appropriate it and to grow.

Mental and moral control, by stimulating healthy function, to restore their lost tone and activity.



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